

**EPA Superfund
Record of Decision:**

**OAK RIDGE RESERVATION (USDOE)
EPA ID: TN1890090003
OU 03
OAK RIDGE, TN
09/19/1991**

THESE TANKS ADDITIONALLY RECEIVED DISCARDED AND WHICH RESULTED FROM WASHING MERCURY WITH A WATER/NITRIC ACID SOLUTION. THESE MECHANISMS ACCOUNT FOR THE MAJORITY OF MERCURY AND MERCURY-CONTAMINATED SEDIMENT CONTAINED IN THE TANKS.

TANK 2101-U HAS BEEN ABANDONED IN PLACE AND NO LONGER RECEIVES WATER FROM THE FAN ROOM SUMPS. WATER PREVIOUSLY ENTERING TANK 2101-U HAS BEEN REDIRECTED TO TANK 2100-U; THEREFORE, TANK 2100-U NOW RECEIVES ALL WATER PUMPED FROM THE FAN ROOM SUMPS IN BUILDING 9101-4. TANK 2104-U CURRENTLY HAS WATER FLOWING ONLY THROUGH THE NORTH COMPARTMENT.

IN MAY 1983, A MEMORANDUM OF UNDERSTANDING (MOU) WAS SIGNED BY THE US DEPARTMENT OF ENERGY (DOE), THE US ENVIRONMENTAL PROTECTION AGENCY (EPA), AND THE STATE OF TENNESSEE CONCERNING COMPLIANCE WITH POLLUTION CONTROL STANDARDS AT THE Y-12 PLANT. AMONG OTHER THINGS IN THE MOU, DOE AGREED TO SUBMIT TO EPA AND THE STATE OF TENNESSEE A REPORT DESCRIBING ALL Y-12 PLANT DISCHARGES TO UEFPC AND INTERIM CONTROL MEASURES FOR THE SAME AND SUBMIT A MASTER MONITORING PLAN FOR SURFACE AND GROUNDWATER AT THE SITE. DISCHARGES TO UEFPC WERE ALSO THE SUBJECT OF A COMPLAINT AND ORDER ISSUED AGAINST THE Y-12 PLANT BY THE TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT IN SEPTEMBER 1983.

ON DECEMBER 21, 1989, THE ORR WAS ADDED TO THE NATIONAL PRIORITIES LIST. PAST RELEASES OF MERCURY FROM THE Y-12 PLANT TO AREA SURFACE WATERS WAS A PRINCIPAL FACTOR IN THE LISTING DECISION.

#HOCF

3. HIGHLIGHTS OF COMMUNITY PARTICIPATION

THE INTERIM ACTION PROPOSED PLAN FOR THE MERCURY TANK REMEDIATION AT THE SITE WAS RELEASED TO THE PUBLIC ON JUNE 28, 1991. THIS DOCUMENT WAS MADE AVAILABLE IN THE ADMINISTRATIVE RECORD MAINTAINED AT THE DOE INFORMATION RESOURCE CENTER LOCATED AT 105 BROADWAY IN OAK RIDGE. THE NOTICE OF AVAILABILITY WAS PUBLISHED IN THE OAK RIDGER ON JULY 7, 14 AND 21, 1991. NOTICES WERE ALSO PUBLISHED IN THE ROANE COUNTY NEWS AND THE KNOXVILLE JOURNAL ON JULY 8, 15, AND 22, 1991, AND THE KNOXVILLE NEWS-SENTINEL ON JULY 21 AND 30, 1991. A PUBLIC COMMENT PERIOD WAS HELD FROM JUNE 30, 1991 TO JULY 30, 1991. IN ADDITION TO PUBLIC COMMENT AND THE ACCESSIBILITY OF THE INFORMATION, A PUBLIC INFORMATION SESSION WAS HELD ON JULY 22, 1991. AT THIS SESSION, REPRESENTATIVES FROM DOE AND MARTIN MARIETTA ENERGY SYSTEMS MAINTENANCE AND OPERATIONS ANSWERED QUESTIONS AND RECEIVED COMMENTS. A RESPONSE TO COMMENTS RECEIVED DURING THE COMMENT PERIOD IS INCLUDED IN THE APPENDIX A. RESPONSIVENESS SUMMARY OF THIS INTERIM ACTION RECORD OF DECISION (ROD).

THIS DECISION DOCUMENT PRESENTS THE SELECTED INTERIM ACTION FOR THE MERCURY TANK REMEDIATION AT THE SITE CHOSEN IN ACCORDANCE WITH THE COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA), AS AMENDED BY THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND, TO THE EXTENT PRACTICABLE, THE NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN (NCP). THE DECISION FOR THIS SITE IS BASED ON THE ADMINISTRATIVE RECORD AND INDICATIONS OF A CURRENT OR POTENTIAL THREAT TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT.

#SRRA

4. SCOPE AND ROLE OF RESPONSE ACTION WITHIN SITE STRATEGY

THE MAJOR GOAL OF THIS INTERIM ACTION IS TO REDUCE THE AMOUNT OF MERCURY-CONTAMINATED SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM BY MINIMIZING THE POTENTIAL FOR WATER TO RESUSPEND MERCURY-CONTAMINATED SEDIMENT WHILE PASSING THROUGH THE TANKS. THIS ACTION IS INTENDED TO ADDRESS ONLY CONTAMINATED SEDIMENT CONTAINED IN THE TANKS. IT WILL ALSO ENHANCE THE CAPABILITIES OF THE TWO REMAINING OPERATING TANKS TO SETTLE MERCURY-CONTAMINATED SEDIMENT PUMPED FROM THE FAN ROOM SUMPS.

MERCURY IS ONE OF THE MAJOR CONTAMINANTS LEAVING THE PLANT BY SURFACE WATER TRANSPORT. REMOVAL OF THE SEDIMENT FROM THE TANKS MITIGATES ONE OF THE SURFACE WATER SOURCES. METHODS FOR TREATING THE FAN ROOM SUMP WATER PRIOR TO ITS ENTERING THE TANKS ARE BEING CONSIDERED; HOWEVER, SUITABLE METHODS FOR REDUCING MERCURY CONCENTRATIONS TO LESS THAN 2 PPB ARE STILL BEING DEMONSTRATED AND EVALUATED. TREATMENT OF THE FAN ROOM SUMP WATER AND OTHER CERCLA AND CLEAN WATER ACT EFFORTS ARE BEING DEVELOPED AND IMPLEMENTED TO REMEDIATE SOURCES OF MERCURY AT THE Y-12 PLANT. THIS IS NOT THE FINAL ACTION PLANNED FOR THE SURFACE WATER PATHWAY AT THE SITE. SUBSEQUENT INVESTIGATIONS AND RESPONSE ACTIONS ARE PLANNED TO ADDRESS FULLY THE PRINCIPAL THREATS POSED BY CONDITIONS AT THE Y-12 PLANT. THESE ACTIONS WILL BE DEFINED WHEN THE RI/FS FOR UEFPC AND OR THE MERCURY USE AREAS IS COMPLETE AND WILL BE SUBJECT TO PUBLIC COMMENT.

#SSC

5. SUMMARY OF SITE CHARACTERIZATIONS

THE FOLLOWING THREE TANKS CONTAIN MERCURY-CONTAMINATED SEDIMENT: TANK 2101-U, 2100-U, AND TANK 2104-U. TANK 2101-U HAS BEEN ABANDONED IN PLACE AND NO LONGER RECEIVES WATER FROM THE FAN ROOM SUMPS. WATER PREVIOUSLY ENTERING TANK 2101-U HAS BEEN REDIRECTED TO TANK 2100-U. AS RECORDED BY A SINGLE SAMPLING EVENT, THE NORTH COMPARTMENT OF TANK 2101-U HAS SEDIMENT WITH A MERCURY CONCENTRATION OF 160,000 PPM AND THE SOUTH COMPARTMENT HAS SEDIMENT WITH A MERCURY CONCENTRATION OF 120 PPM AND A MIXTURE OF OIL AND WATER. THE ESTIMATED VOLUME OF SEDIMENT IS 150 CUBIC FEET.

TANK 2100-U NOW RECEIVES ALL WATER PUMPED FROM THE FAN ROOM SUMPS IN BUILDING 9201-4. DISCHARGES THROUGH THIS TANK HAVE BEEN AS HIGH AS 23,000 GAL PER DAY. MERCURY CONCENTRATIONS IN THE SEDIMENT FOR THE NORTH AND SOUTH COMPARTMENTS ARE 70,000 PPM AND 29,000 PPM RESPECTIVELY, AS RECORDED BY A SINGLE SAMPLING EVENT. THE ESTIMATED VOLUME OF SEDIMENT IN BOTH COMPARTMENTS IS 190 CUBIC FEET.

TANK 2104-U NOW HAS WATER FLOWING ONLY THROUGH THE NORTH COMPARTMENT. MERCURY CONCENTRATIONS IN THE SEDIMENT FOR THE NORTH AND SOUTH COMPARTMENTS ARE 6560 PPM AND 194 PPM RESPECTIVELY. SAMPLING DATA INDICATE THAT RADIOLOGICAL CONTAMINATION IS PRESENT IN TANK 2104-U SEDIMENTS, RESULTING IN THE CLASSIFICATION OF THIS MATERIAL AS MIXED WASTE (A WASTE THAT CONTAINS BOTH A HAZARDOUS WASTE COMPONENT AND A RADIOACTIVE WASTE COMPONENT). SEDIMENT IN TANK 2104-U IS LEVEL WITH THE INVERT OF THE DISCHARGE PIPE IN THE SUMP. THE ESTIMATED VOLUME OF SEDIMENT FOR BOTH COMPARTMENTS IS 140 CUBIC FEET.

#SOSR

6. SUMMARY OF SITE RISKS

CERCLA DIRECTS THAT HUMAN HEALTH AND THE ENVIRONMENT MUST BE PROTECTED FROM CURRENT AND POTENTIAL EXPOSURE TO HAZARDOUS SUBSTANCES AT SUPERFUND SITES. IN ORDER TO ASSESS THE CURRENT AND POTENTIAL RISKS FOR THE Y-12 PLANT, A FULL RISK ASSESSMENT IS BEING CONDUCTED AS PART OF THE RI/FS PROCESS.

ANALYTICAL RESULTS OF WATER SAMPLES COLLECTED FROM THE TANKS SHOW MERCURY CONCENTRATIONS RANGING FROM 7 PPB TO 1600 PPB. ELEMENTAL MERCURY ALSO HAS BEEN FOUND IN CATCH BASINS AND STORM SEWER LINES DOWNGRAIENT FROM THE TANKS. TANK 2104-U IS BELIEVED TO BE A POSSIBLE SOURCE OF THE MERCURY IN THE CATCH BASINS. AS THE MERCURY-CONTAMINATED WATER FROM THESE TANKS LEAVES THE PLANT, IT ENTERS UEFPC, WHICH DISCHARGES TO EFPC. THE POTENTIAL EXISTS FOR ABSORPTION OF MERCURY BY ON-SITE AND OFF-SITE AQUATIC ORGANISMS. IN ADDITION, EFPC FLOWS THROUGH THE CITY OF OAK RIDGE WHERE THE PUBLIC HAS ACCESS TO THE CREEK. IMPLEMENTATION OF THE INTERIM ACTION WILL HELP REDUCE THE AMOUNT OF MERCURY-CONTAMINATED SEDIMENT THAT COULD BE DISCHARGED TO UEFPC.

THE MAJOR GOAL OF THE INTERIM ACTION IS TO REDUCE THE MERCURY CONTAMINATED SEDIMENT ENTERING THE STORM SEWER SYSTEM BY MINIMIZING THE POTENTIAL FOR WATER PASSING THROUGH THE TANKS TO RESUSPEND MERCURY CONTAMINATED SEDIMENTS. THIS ACTION WILL ACHIEVE SIGNIFICANT RISK REDUCTION EARLY IN THE SUPERFUND INVESTIGATION PROCESS.

ACTUAL OR THREATENED RELEASES OF HAZARDOUS SUBSTANCES FROM THE SITE, IF NOT ADDRESSED BY IMPLEMENTING THE RESPONSE ACTION SELECTED IN THIS INTERIM ACTION ROD, MAY PRESENT A CURRENT OR POTENTIAL THREAT TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT.

7. DESCRIPTION OF ALTERNATIVES

7.1 ALTERNATIVE 1 - NO ACTION

THE NCP REQUIRES THAT THE NO ACTION ALTERNATIVE BE CONSIDERED THROUGH THE DETAILED ANALYSIS. IT PROVIDES A BASELINE FOR COMPARISON OF OTHER ALTERNATIVES. UNDER THE NO ACTION ALTERNATIVE, NO SOURCE CONTROL REMEDIAL MEASURES WOULD BE UNDERTAKEN AT THE SITE.

CAPITAL COST	\$0
ANNUAL OPERATION AND MAINTENANCE (O&M) COSTS	\$0
SURFACE WATER MONITORING WILL BE REQUIRED: HOWEVER, IT IS ALREADY BEING CONDUCTED AS PART OF THE DAILY MONITORING PROGRAM AT THE PLANT.	
MONTHS TO IMPLEMENT	0

THE NO ACTION ALTERNATIVE WOULD NOT ELIMINATE ANY EXPOSURE PATHWAYS OR REDUCE THE LEVEL OF RISK.

7.2 ALTERNATIVE 2 - ABANDON TANKS IN PLACE

TO PREVENT MERCURY-CONTAMINATED SEDIMENT FROM FLOWING INTO THE STORM SEWER SYSTEM. THE VALVES ON THE TANKS COULD BE ADJUSTED TO DIVERT WATER AROUND THE TANKS. THIS ALTERNATIVE IS APPLICABLE ONLY TO TANKS 2100-U AND 2104-U. TANK 2101-U HAS ALREADY BEEN ABANDONED IN PLACE. EXISTING VALVES ON TANKS 2100-U AND 2104-U CAN BE OPENED TO ALLOW WATER PUMPED FROM THE FAN ROOM SUMPS TO DISCHARGE DIRECTLY TO THE STORM SEWER. THE TANKS WOULD BE CLEANED AND REMOVED AT A LATER DATE WHEN BUILDING 9201-4 IS DEMOLISHED UNDER THE DECONTAMINATION AND DECOMMISSIONING PROGRAM.

CAPITAL COST	\$0
ANNUAL O&M COSTS	\$0
MONTHS TO IMPLEMENT	1

THIS ALTERNATIVE REDUCES THE POSSIBILITY OF MERCURY-CONTAMINATED SEDIMENT IN THE TANKS ENTERING THE STORM SEWER HOWEVER, IT ELIMINATES THE OPPORTUNITY FOR SEDIMENT AND MERCURY PUMPED FROM THE FAN ROOM SUMPS TO SETTLE IN THE TANKS BEFORE BEING DISCHARGED TO THE STORM SEWER.

7.3 ALTERNATIVE 3 - REMOVAL AND DISPOSAL OF CONTAMINATED SEDIMENT

THIS ALTERNATIVE REMOVES MERCURY-CONTAMINATED SEDIMENT, LIQUIDS, AND SOLIDS FROM THE TANKS. OIL AND OILY WATER IN TANK 2101-U WOULD BE REMOVED AND SENT TO AN OFF-SITE PERMITTED HAZARDOUS WASTE FACILITY FOR TREATMENT AND DISPOSAL. MERCURY-CONTAMINATED SEDIMENT WOULD ALSO BE REMOVED FROM TANKS 2100-U AND 2101-U AND SENT TO AN OFF-SITE PERMITTED HAZARDOUS WASTE MANAGEMENT FACILITY. MIXED WASTES IN TANK 2104-U WOULD BE SOLIDIFIED TO IMMOBILIZE MERCURY, RADIONUCLIDES, AND LIQUIDS AND SENT TO A PERMITTED HAZARDOUS WASTE STORAGE FACILITY WITHIN ORR. WATER REMOVED FROM ALL THREE TANKS BEFORE SEDIMENT REMOVAL WOULD BE SCREENED FOR HAZARDOUS AND RADIOLOGICAL CONTAMINATION AND SENT TO THE WEST END TREATMENT FACILITY, WHICH IS LOCATED WITHIN THE SITE. TANK 2101-U WOULD BE MONITORED TO VERIFY THAT ADDITIONAL WATER IS NOT ENTERING THE TANK. SEDIMENT VOLUMES IN TANKS 2100-U AND 2104-U WOULD BE MONITORED TO DETERMINE THE RATE OF SEDIMENT

ACCUMULATION IN EACH TANK. THESE OBSERVATIONS WOULD BE USED TO DETERMINE A SCHEDULE FOR PERIODIC REMOVAL OF SEDIMENT FROM THE TANKS.

CAPITAL COST	\$0
ANNUAL O&M COSTS	\$586,000
MONTHS TO IMPLEMENT	3

THIS ALTERNATIVE REMOVES A KNOWN SOURCE OF MERCURY-CONTAMINATED SEDIMENT FROM CONTACT WITH WATER IN THE STORM SEWER SYSTEM. IT ALSO ALLOWS FOR THE CONTINUED USE OF TANKS 2100-U AND 2104-U AS SETTLING BASINS TO TRAP SUSPENDED PARTICLES OF MERCURY AND SEDIMENT PUMPED FROM THE FAN ROOM SUMPS. THIS ACTION WOULD ACHIEVE SIGNIFICANT RISK REDUCTION EARLY IN THE SUPERFUND PROCESS.

8. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

THIS SECTION PROVIDES THE BASIS FOR DETERMINING WHICH ALTERNATIVE (1) MEETS THE THRESHOLD CRITERIA OF OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT AND COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) TO CERCLA; (2) PROVIDES THE "BEST BALANCE" BETWEEN EFFECTIVENESS AND REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT IMPLEMENTABILITY, AND COST; AND (3) RECEIVES STATE AND COMMUNITY ACCEPTANCE. A GLOSSARY OF THE EVALUATION CRITERIA IS PROVIDED BELOW:

- OVERALL PROTECTION OF HUMAN HEALTH AND ENVIRONMENT: ADDRESSES WHETHER A REMEDY PROVIDES ADEQUATE PROTECTION AND DESCRIBES HOW RISKS POSED THROUGH EACH PATHWAY ARE ELIMINATED, REDUCED, OR CONTROLLED THROUGH TREATMENT ENGINEERING CONTROLS OR INSTITUTIONAL CONTROLS.
- COMPLIANCE WITH ARARS: ADDRESSES WHETHER A REMEDY WILL MEET ALL OF THE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS OF OTHER FEDERAL AND STATE ENVIRONMENTAL STATUTES AND/OR PROVIDE GROUNDS FOR INVOKING A WAIVER.
- LONG-TERM EFFECTIVENESS AND PERMANENCE: THE MAGNITUDE OF RESIDUAL RISK AND THE ABILITY OF A REMEDY TO MAINTAIN OVER THE LONG TERM RELIABLE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT ONCE CLEANUP GOALS HAVE BEEN MET.
- REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT: THE ANTICIPATED PERFORMANCE OF THE TREATMENT TECHNOLOGIES THAT MAY BE EMPLOYED IN A REMEDY.
- SHORT-TERM EFFECTIVENESS: THE SPEED WITH WHICH THE REMEDY ACHIEVES PROTECTION AND THE REMEDY'S POTENTIAL TO CREATE ADVERSE IMPACTS ON HUMAN HEALTH AND THE ENVIRONMENT THAT MAY RESULT DURING THE CONSTRUCTION AND IMPLEMENTATION PERIOD.
- IMPLEMENTABILITY: THE TECHNICAL AND ADMINISTRATIVE FEASIBILITY OF A REMEDY, INCLUDING THE AVAILABILITY OF MATERIALS AND SERVICES NEEDED TO IMPLEMENT THE CHOSEN SOLUTION.
- COST: INCLUDES CAPITAL AND O&M COSTS.
- STATE ACCEPTANCE: INDICATES WHETHER THE STATE CONCURS WITH, OPPOSES, OR HAS NO COMMENT ON THE PROPOSED PLAN.
- COMMUNITY ACCEPTANCE: THE RESPONSIVENESS SUMMARY IN THE APPENDIX OF THE ROD REVIEWS THE PUBLIC COMMENTS RECEIVED FROM THE PUBLIC MEETING ON THE PROPOSED PLAN.

8.1 OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE NO ACTION ALTERNATIVE IS NOT PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT. IT CONTINUES TO ALLOW THE TRANSPORT OF THE MERCURY-CONTAMINATED SEDIMENT FROM THE TANKS INTO THE STORM SEWER.

ALTERNATIVE 2, ABANDON TANKS IN PLACE, REMOVES MERCURY-CONTAMINATED SEDIMENT IN THE TANKS FROM CONTACT WITH THE STORM SEWER BUT DOES NOT ALLOW THE TANKS TO BE USED AS SETTING BASINS FOR WATER PUMPED FROM THE FAN ROOM SUMPS.

ALTERNATIVE 3, REMOVAL AND DISPOSAL OF CONTAMINATED SEDIMENT, REMOVES THE CONTAMINATED MATERIAL FROM THE TANKS AND ALLOWS THE TANKS TO CONTINUE TO FUNCTION AS SETTING BASINS. THIS ALTERNATIVE PROVIDES PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT BY REDUCING OR CONTROLLING THE RISK THROUGH REMOVAL OF THE CONTAMINATED SEDIMENT AND THEREFORE PREVENTING THE SPREAD OF CONTAMINATION.

8.2 COMPLIANCE WITH ARARS

FOR ALTERNATIVES 1 AND 2, NO ARARS NEED TO BE MET. FOR ALTERNATIVE 3, THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), TENNESSEE HAZARDOUS/MIXED WASTE MANAGEMENT REGULATIONS ARE APPLICABLE FOR TREATMENT, STORAGE, AND/OR DISPOSAL OF TANKS SEDIMENTS. IN ADDITION, DOE ORDERS FOR MANAGEMENT OF RADIOACTIVE/MIXED WASTES ARE CONSIDERED RELEVANT. ALL ARARS WILL BE MET AS THE INTERIM ACTION IS IMPLEMENTED. THE RCRA LAND DISPOSAL RESTRICTION (LDR) REQUIREMENTS WILL BE MET AS EXPLAINED BELOW.

THE RCRA LDR TREATMENT STANDARDS FOR D009 (MERCURY) HAZARDOUS AND MIXED WASTE WERE PROMULGATED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) ON JUNE 1, 1990. HOWEVER, DUE TO NATIONWIDE SHORTAGE OF TREATMENT CAPACITY, EPA ESTABLISHED A 2-YEAR NATIONAL CAPACITY VARIANCE FOR THE CLASSES OF WASTES CONTAINED IN THE THREE TANKS AT THE Y-12 PLANT. THIS VARIANCE EXPIRES ON MAY 8, 1992. THE LDR TREATMENT STANDARDS FOR D009 WASTE MAY OR MAY NOT HAVE TO BE MET DEPENDING ON THE TIMING OF THE SPECIFIC ACTION (STORAGE/DISPOSAL) PLANNED FOR THE REMOVED SEDIMENTS. BECAUSE OF THE VARIANCE PRESENTLY IN EFFECT AND THE ALLOWANCE FOR ACCUMULATION OF TREATABLE QUANTITIES OF WASTE IN THE LDR STORAGE STANDARDS, IT IS NOT NECESSARY TO WAIVE THIS ARAR.

8.3 LONG-TERM EFFECTIVENESS AND PERMANENCE

NO ALTERNATIVE PROVIDES A LONG-TERM REMEDY FOR PREVENTING MERCURY FROM ENTERING THE STORM SEWER SYSTEM. ALTERNATIVE 3 IS A PERMANENT SOLUTION FOR THE SEDIMENT IN THE TANKS BECAUSE THE SEDIMENT IS COMPLETELY REMOVED. ALTERNATIVE 2 IS NOT A PERMANENT SOLUTION BECAUSE THE CONTAMINATED SEDIMENT HAS ONLY BEEN ISOLATED FROM THE ENVIRONMENT, NOT MOVED AS IN ALTERNATIVE 3. LONG-TERM EFFECTIVENESS AND PERMANENCE WILL BE EVALUATED AS PART OF THE DEVELOPMENT OF THE FINAL ACTION FOR UEFPD AND/OR THE MERCURY USE AREA AT THE Y-12 PLANT.

8.4 REDUCTION OF TOXICITY, MOBILITY, OR VOLUME OF THE CONTAMINANTS

THROUGH TREATMENT ALTERNATIVES 1 AND 2 PROVIDE NO TREATMENT TO REDUCE THE TOXICITY, MOBILITY, OR VOLUME OF THE CONTAMINANT. ALTERNATIVE 3 WILL PRODUCE FOUR SEPARATE WASTE STREAMS, SOME OF WHICH WILL BE TREATED TO REDUCE THE TOXICITY, MOBILITY, AND/OR VOLUME OF CONTAMINANTS. THE MOBILITY OF MERCURY AND RADIONUCLIDES IN THE MIXED WASTE REMOVED FROM TANK 2104-U WILL BE REDUCED BY SOLIDIFICATION. HOWEVER, THIS IS ONLY AN INTERIM MEASURE. THE NEED FOR FURTHER TREATMENT WILL BE EVALUATED AS PART OF THE DEVELOPMENT OF THE FINAL ACTION UEFPD AND/OR THE MERCURY USE AREAS, WHICH ARE EXPECTED TO INVOLVE MUCH LARGER QUANTITIES OF MERCURY-CONTAMINATED SOILS. ULTIMATELY, THE MERCURY-CONTAMINATED HAZARDOUS AND MIXED WASTE WILL HAVE TO BE TREATED TO RCRA LDR TREATMENT STANDARDS FOR D009 WASTE. MERCURY-CONTAMINATED SEDIMENTS REMOVED FROM TANKS 2100-U AND 2101-U AND SENT TO A PERMITTED OFF-SITE HAZARDOUS WASTE MANAGEMENT FACILITY

MAY OR MAY NOT BE TREATED BY A THERMAL MERCURY RECOVERY PROCESS PRIOR TO DISPOSAL DEPENDING ON THE DATE OF SHIPMENT. IF TREATED, THE TOXICITY AND VOLUME OF CONTAMINANT WOULD BE REDUCED. OIL AND OILY WATER IN TANK 2101-U WILL BE SENT TO AN OFF-SITE PERMITTED HAZARDOUS WASTE MANAGEMENT FACILITY FOR TREATMENT. OILS AND HIGH ORGANIC CONTENT WASTES ARE TYPICALLY TREATED BY INCINERATION, WHICH REDUCES THE VOLUME, TOXICITY, AND MOBILITY OF CONTAMINANTS. CONTAMINATED WATER REMOVED FROM THE TANKS WILL BE TREATED ON-SITE TO REDUCE TOXICITY BEFORE DISCHARGE. ALTERNATIVE 3 IS ALSO EXPECTED TO IMPROVE THE SETTLING OF SEDIMENTS AND ELEMENTAL MERCURY IN WATER PUMPED FROM THE FAN ROOM SUMPS. THIS SHOULD DECREASE DISCHARGES OF MERCURY TO UEFPC.

8.5 SHORT-TERM EFFECTIVENESS

THERE WOULD BE NO ADVERSE EFFECTS TO HUMAN HEALTH OR THE ENVIRONMENT FROM IMPLEMENTING ANY OF THESE ALTERNATIVES. ANY SHORT-TERM RISK TO WORKERS INVOLVED IN COMPLETING ALTERNATIVE 3 WOULD BE REDUCED THROUGH THE IMPLEMENTATION OF A DETAILED SITE-SPECIFIC HEALTH AND SAFETY PLAN. ALTERNATIVE 3 IS EFFECTIVE IN THE SHORT-TERM BECAUSE IT WOULD PREVENT A KNOWN SOURCE OR CONTAMINATION FROM DISCHARGING TO THE STORM SEWER SYSTEM.

8.6 COST

THE ESTIMATED COST FOR ALTERNATIVE 3 IS \$586,000. FOR THIS ACTION THERE WOULD BE NO COST FOR MONITORING THE TANKS AFTER CLEANING BECAUSE OF CURRENT MONITORING PROGRAMS IN PLACE AT THE Y-12 PLANT.

8.7 STATE ACCEPTANCE

THE STATE OF TENNESSEE, AS REPRESENTED BY THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, DOE OVERSIGHT DIVISION, CONCURS IN THE SELECTION OF ALTERNATIVE 3 AS AN INTERIM ACTION FOR THE SITE.

8.8 COMMUNITY ACCEPTANCE

BASED ON COMMENTS MADE BY CITIZENS AT THE PUBLIC INFORMATION AND COMMENT SESSION HELD ON JULY 22, 1991 AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD, DOE PERCEIVES THAT THE COMMUNITY BELIEVES THE INTERIM ACTION WILL EFFECTIVELY PROTECT HUMAN HEALTH AND THE ENVIRONMENT.

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9. THE SELECTED REMEDY

BASED UPON CONSIDERATION OF THE REQUIREMENTS OF CERCLA, THE DETAILED ANALYSIS OF THE ALTERNATIVES, AND THE PUBLIC COMMENTS, DOE HAS DETERMINED THAT ALTERNATIVE 3, REMOVAL AND DISPOSAL OF CONTAMINATED SEDIMENT, IS AN APPROPRIATE INTERIM ACTION UNTIL A FINAL ACTION FOR UEFPC AND/OR MERCURY USE AREAS AT THE Y-12 PLANT IS DETERMINED. BASED ON CURRENT INFORMATION, THIS ALTERNATIVE PROVIDES THE BEST BALANCE WITH RESPECT TO THE NINE CRITERIA USED TO EVALUATE ALTERNATIVES.

THE MAJOR GOAL OF THE INTERIM ACTION IS TO REDUCE MERCURY-CONTAMINATED SEDIMENT AND ELEMENTAL MERCURY ENTERING THE STORM SEWER SYSTEM FROM THREE TANKS. ALTHOUGH THE INTERIM ACTION WILL NOT COMPLETELY PREVENT MERCURY FROM ENTERING THE STORM SEWERS, IT WILL REMOVE KNOWN SOURCES OF CONTAMINATION CURRENTLY IN DIRECT CONTACT WITH WATER ENTERING STORM SEWERS. THIS INTERIM ACTION WILL ACHIEVE SIGNIFICANT RISK REDUCTION EARLY IN THE SUPERFUND PROCESS.

THE FINAL REMEDY FOR ELIMINATING MERCURY FROM THE STORM SEWER SYSTEM IS NOT ADDRESSED IN THIS INTERIM ACTION ROD BECAUSE SUCH GOALS ARE BEYOND THE LIMITED SCOPE OF THIS ACTION. SUBSEQUENT INTERIM OR FINAL ACTIONS ARE PLANNED TO ADDRESS THE GROUNDWATER PUMPED INTO THE STORM SEWER

SYSTEM BY THE FAN ROOM SUMPS. THE FINAL REMEDY FOR RELEASES OF MERCURY AND OTHER CONTAMINANTS TO UEFPC WILL BE ADDRESSED BY THE FINAL REMEDIAL ACTION ROD FOR UEFPC AND OR THE MERCURY USE AREAS.

10. STATUTORY REQUIREMENTS

DOE BELIEVES THAT THE REMOVAL AND DISPOSAL OF CONTAMINATED SEDIMENT WILL SATISFY THE STATUTORY REQUIREMENTS PROVIDING PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT, WILL ATTAIN ARARS DIRECTLY ASSOCIATED WITH THIS ACTION, AND WILL BE COST-EFFECTIVE. SECTIONS 10.1 THROUGH 10.6 BELOW SUMMARIZE THE STATUTORY REQUIREMENTS FOR THE SITE.

10.1 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE SELECTED REMEDY PROTECTS HUMAN HEALTH AND THE ENVIRONMENT THROUGH REMOVAL OF THE CONTAMINATED SEDIMENT AND PREVENTION OF THE SPREAD OF CONTAMINATION.

10.2 ATTAINMENT OF THE ARARS

THE SELECTED REMEDY WILL COMPLY WITH ALL IDENTIFIED ARARS FOR THIS LIMITED ACTION. RCRA, TENNESSEE HAZARDOUS/MIXED WASTE MANAGEMENT REGULATIONS, AND TENNESSEE WATER POLLUTION CONTROL REGULATIONS ARE APPLICABLE FOR TREATMENT, STORAGE, AND/OR DISPOSAL OF REMOVED SEDIMENT. IN ADDITION, DOE ORDERS FOR MANAGEMENT OF RADIOACTIVE/MIXED WASTES WILL BE FOLLOWED.

10.3 COST EFFECTIVENESS

THE INTERIM ACTION REMEDY EMPLOYS A PROVEN TECHNOLOGY AND AFFORDS OVERALL EFFECTIVENESS PROPORTIONAL TO ITS COSTS SUCH THAT THE REMEDY REPRESENTS A REASONABLE VALUE FOR THE MONEY.

10.4 UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGY OR RESOURCE RECOVERY TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE

THE OBJECTIVE OF THIS INTERIM ACTION IS TO REDUCE MERCURY-CONTAMINATED SEDIMENT AND ELEMENTAL MERCURY ENTERING THE STORM SEWER SYSTEM FROM THREE TANKS. REMOVAL OF THE CONTAMINATED SEDIMENT WILL ACHIEVE REDUCTION IN THE CONTAMINATION AT THE SITE AND WILL ENHANCE THE ATTAINMENT OF A PERMANENT REMEDY. THIS IS NOT THE FINAL ACTION PLANNED FOR THE SITE, AND DOE WILL CONTINUE TO EVALUATE LONG-TERM EFFECTIVENESS AND PERMANENCE AS PART OF THE DEVELOPMENT OF THE FINAL ACTION FOR UEFPC AND/OR MERCURY USE AREAS AT THE Y-12 PLANT. COMPLETION OF THE RI/PS PROCESS WILL FULLY ADDRESS THE PRINCIPAL THREATS POSED BY THE CONDITIONS AT THE SITE. THE FINAL DECISION DOCUMENT WILL ADDRESS UTILIZATION OF A PERMANENT SOLUTION FOR THE RELEASES FROM THE SITE VIA THE SURFACE WATER PATHWAY.

10.5 PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

THIS IS NOT THE FINAL ACTION PLANNED FOR CONTROLLING RELEASES TO UEFPC FROM THE Y-12 PLANT. THE FINAL REMEDY FOR ELIMINATING MERCURY FROM THE STORM SEWER SYSTEM IS NOT ADDRESSED IN THIS INTERIM ACTION ROD BECAUSE SUCH GOALS ARE BEYOND THE LIMITED SCOPE OF THIS ACTION. HOWEVER, AS EXPLAINED IN SECTION 8.4, TREATMENT APPROPRIATE TO THE LIMITED SCOPE OF THIS ACTION WILL BE UTILIZED AS NECESSARY TO MEET ARARS. THE SELECTED REMEDY WILL UTILIZE SOLIDIFICATION TO TREAT 140 CUBIC FEET OF MIXED WASTE. IF REQUIRED FOR DISPOSAL, 340 CUBIC FEET OF MERCURY-CONTAMINATED SEDIMENT WILL BE TREATED AT AN OFF-SITE PERMITTED HAZARDOUS WASTE MANAGEMENT FACILITY BY A THERMAL TREATMENT PROCESS FOR RECOVERY OF MERCURY. OIL AND OILY WATER WILL BE TREATED AT AN OFF-SITE PERMITTED HAZARDOUS WASTE MANAGEMENT FACILITY. CONTAMINATED WATER WILL BE TREATED AT AN ON-SITE WASTEWATER TREATMENT PLANT. FINALLY, REMOVING ACCUMULATED SEDIMENTS FROM THE OPERATING TANKS WILL RESTORE THEIR SEDIMENTATION (TREATMENT) FUNCTION.

#DSC

10.6 DOCUMENTATION OF SIGNIFICANT CHANGES

THE PROPOSED PLAN FOR THE SITE WAS RELEASED FOR PUBLIC COMMENT ON JUNE 28, 1991, AND THE REMOVAL AND DISPOSAL OF CONTAMINATED SEDIMENT AS THE PREFERRED INTERIM ACTION ALTERNATIVE WAS IDENTIFIED. DOE REVIEWED ALL WRITTEN AND VERBAL COMMENTS SUBMITTED DURING THE PUBLIC COMMENT PERIOD. UPON REVIEW OF THESE COMMENTS, IT WAS DETERMINED THAT NO SIGNIFICANT CHANGES TO THE ALTERNATIVE AS IT WAS ORIGINALLY IDENTIFIED IN THE PROPOSED PLAN WERE NECESSARY.